Claims

[1] An information storage medium of reproducing information, which is recorded as marks smaller than a resolution of an incidence beam, the information storage medium comprising:
a substrate; and
a super resolution layer directly arranged on the substrate without any layer therebetween to reproduce the marks by generating a thermal reaction at a portion where the incidence beam is focused.

[2] The information storage medium of claim 1, wherein the marks are formed on the substrate in a pit type.

[3] The information storage medium of any one of claims 1 and 2, wherein the super resolution layer is formed of any one material selected from metal oxides formed of PtO_x, AuO_x, PdO_x, and AgO_x, or a polymer compound.

[4] The information storage medium of any one of claims 1 and 2, further including at least one thermal absorption layer of absorbing the heat of the incidence beam.

[5] The information storage medium of claim 4, wherein the thermal absorption layer is formed of any one of a Ge-Sb-Te-based alloy and an Ag-In-Sb-Te-based alloy.

[6] The information storage medium of claim 4, wherein a dielectric layer is arranged between the super resolution layer and each of at least one thermal absorption layer.

[7] An information storage medium of reproducing information, which is recorded as marks smaller than a resolution of an incidence beam, the information storage medium comprising:
a substrate; and
a thermal absorption layer directly arranged on the substrate without any layer therebetween to reproduce the marks by generating a thermal absorption at a portion where a reproducing beam is focused.

[8] The information storage medium of claim 7 is a read only information storage medium.

[9] The information storage medium of any one of claims 7 and 8, further including a super resolution layer formed on the thermal absorption layer and thermally r eacting with the reproducing beam.

[10] The information storage medium of claim 9, wherein the super resolution layer is

formed of any one material selected from metal oxides formed of PtO_x, AuO_x, PdO_x, and AgO_x, or a polymer compound.

[11] The information storage medium of claim 9, further including another thermal absorption layer on the super resolution layer.

[12] The information storage medium of claim 9, wherein the thermal absorption layer is formed of any one of a Ge-Sb-Te-based alloy and an Ag-In-Sb-Te-based alloy.

[13] The information storage medium of claim 9, wherein a dielectric layer is arranged between the thermal absorption layer and the super resolution layer.

[14] A method of preventing a reproducing characteristic from being deteriorated when reproducing information, which is recorded as marks, from an information storage medium including a substrate on which the marks smaller than a resolution are recorded and a thermal absorption layer and/or a super resolution layer possibly reproducing the marks, the method comprising:

radiating a reproducing beam higher than a predetermined temperature to the substrate to generate a thermal reaction on the thermal absorption layer and/or the super resolution layer; and

exhausting a heat from the reproducing beam from the substrate by omitting a layer of disturbing the flow of the heat from the reproducing beam between the substrate and the thermal absorption layer or the substrate and the super resolution layer.

[15] The method of claim 14, wherein the thermal absorption layer is formed of any one of a Ge-Sb-Te-based alloy and an Ag-In-Sb-Te-based alloy.

[16] The method of any one of claims 14 and 15, wherein the super resolution layer is formed of any one material selected from metal oxides formed of PtO_x, AuO_x, PdO_x, and AgO_x, or a polymer compound.